2. MSA-RGD, in which the RGD sequence (VRGDF, SEQ ID NO: 1) replaces the MSA sequence between Cys 53 and Cys 62

3. MSA-11B3, in which the 11-B3 peptide sequence (PSTLRAQ, SEQ ID NO: 3) replaces the MSA sequence between Cys 53 and Cys 62

4. MSA-1H5, in which the 1-H5 peptide sequence (HTKQIPRHIYSA, SEQ ID NO: 4) is inserted between Glu 57 and Ser 58 within the Cys 53 and Cys 62 loop of MSA

5. MSA-9G5, in which the 9-G5 peptide sequence (DSHKRLK, SEQ ID NO: 5) replaces the MSA sequence between Cys 53 and Cys 62

6. MSA-myc, in which the Myc epitope peptide sequence (EQKLISEEDL, SEQ ID NO: 2) is inserted between Glu 57 and Ser 58 within the Cys 53 and Cys 62 loop of MSA (negative control)

In the claims:

For the convenience of the Examiner, all elected claims (28-33 and 54-92), whether or not amended, are presented below.

28. (**Reiterated**) A nucleic acid encoding a chimeric polypeptide comprising serum albumin protein (SA) having a biologically active heterologous peptide sequence inserted therein, wherein the chimeric polypeptide exhibits increased biological activity relative to the heterologous peptide sequence itself.

29. (**Reiterated**) A delivery vector comprising the nucleic acid of claim 28, 54, or 55.

30. (**Reiterated**) The delivery vector of claim 29, wherein said delivery vector comprises a virus or retrovirus.

31. (**Reiterated**) The delivery vector of claim 30, wherein said virus or retrovirus is selected from adenoviruses, adeno-associated viruses, herpes simplex viruses, human immunodeficiency viruses, or vaccinia viruses.

32. (**Reiterated**) Transfected cells comprising target cells which have been exposed to the delivery vector of claim 29.

33. (**Reiterated**) The transfected cells of claim 32, wherein the cells are selected from blood cells, skeletal muscle cells, stem cells, skin cells, liver cells, secretory gland cells, hematopoietic cells, or marrow cells.

54. (**Reiterated**) A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:

A represents a first fragment of serum albumin (SA);

B represents a biologically active heterologous peptide sequence; and,

C represents a second peptide fragment of SA;

wherein the chimeric polypeptide exhibits increased biological activity relative to the heterologous peptide sequence itself.

55. (**Reiterated**) A nucleic acid encoding a chimeric polypeptide, which polypeptide comprises:

a first peptide fragment, comprising an N-terminal fragment of serum albumin (SA) protein;

a second peptide fragment, comprising a biologically active heterologous peptide sequence; and,

a third peptide fragment, comprising a C-terminal fragment of SA;

wherein the chimeric polypeptide exhibits increased biological activity relative to the heterologous peptide sequence itself.

56. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence comprises a fragment of an angiogenesis-inhibiting protein or polypeptide.

57. (**Reiterated**) The nucleic acid of claim 56, wherein said angiogenesis-inhibiting protein or polypeptide is selected from angiostatin, endostatin, and peptide fragments thereof.

58. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence binds to a cell surface receptor protein.

59. (**Reiterated**) The nucleic acid of claim 58, wherein the receptor protein is a G-protein coupled receptor.

60. (**Reiterated**) The nucleic acid of claim 58, wherein the receptor protein is a tyrosine kinase receptor.

61. (**Reiterated**) The nucleic acid of claim 58, wherein the receptor protein is a cytokine receptor.

62. (**Reiterated**) The nucleic acid of claim 58, wherein the receptor protein is a MIRR receptor.

63. (**Reiterated**) The nucleic acid of claim 58, wherein the receptor protein is an orphan receptor.

64. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide binds to an extracellular receptor or an ion channel.

65. (**Reiterated**) The nucleic acid of claim 64, wherein the chimeric polypeptide is an agonist of said receptor or ion channel.

66. (**Reiterated**) The nucleic acid of claim 64, wherein the chimeric polypeptide is an antagonist of said receptor or ion channel.

67. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide induces apoptosis.

68. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide modulates cell proliferation.

69. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide modulates differentiation of cell types.

70. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence comprises between 4 and 400 residues.

71. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence comprises between 4 and 200 residues.

72. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence comprises between 4 and 100 residues.

73. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the heterologous peptide sequence comprises between 4 and 20 residues.

74. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the tertiary structure of the chimeric polypeptide is similar to the tertiary structure of native SA.

75. (**Reiterated**) The nucleic acid of claim 28, wherein the inserted peptide sequence replaces a portion of native SA sequence.

76. (**Reiterated**) The nucleic acid of claim 75, wherein the inserted peptide sequence and the replaced portion of native SA sequence are of unequal length.

77. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 10 times more active than the biologically active heterologous peptide sequence alone.

78. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 100 times more active than the biologically active heterologous peptide sequence alone.

79. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 1000 times more active than the biologically active heterologous peptide sequence alone.

80. (**Reiterated**) A nucleic acid encoding a chimeric polypeptide comprising serum albumin (SA) having at least two biologically active heterologous peptide sequences inserted therein, wherein at least one biologically active heterologous peptide sequence exhibits increased biological activity relative to said one biologically active heterologous peptide sequence itself.

81. (**Reiterated**) The nucleic acid of claim 80, wherein the heterologous peptide sequences are identical.

82. (**Reiterated**) The nucleic acid of claim 80, wherein the heterologous peptide sequences comprise distinct sequences of a protein.

83. (**Reiterated**) The nucleic acid of claim 80, wherein the heterologous peptide sequences comprise sequences from at least two different proteins.

84. (**Reiterated**) The nucleic acid of claim 28, 54 or 55, wherein the biologically active heterologous peptide is the myc epitope or the RGD peptide.

85. (**Reiterated**) The nucleic acid of claim 28, wherein the biologically active heterologous peptide sequence is inserted into a cysteine loop of the serum albumen protein.

86. (**Reiterated**) The nucleic acid of claim 85, wherein the cysteine loop is selected from Cys53- Cys62, Cys75-Cys91, Cys90-Cys101, Cys245-Cys253, Cys266-Cys279, Cys360-Cys369, Cys461-Cys477, Cys476-Cys487, and Cys558-Cys567.

87. (**Reiterated**) The nucleic acid of claim 75, wherein the biologically active heterologous peptide sequence replaces a portion of a cysteine loop of the serum albumen protein.

88. (**Reiterated**) The nucleic acid of claim 87, wherein the cysteine loop is selected from Cys53-Cys62, Cys75-Cys91, Cys90-Cys101, Cys245-Cys253, Cys266-Cys279, Cys360-Cys369, Cys461-Cys477, Cys476-Cys487, and Cys558-Cys567.

89. (**Reiterated**) A nucleic acid encoding a chimeric polypeptide having the structure $(A\text{-}B\text{-}C)_n$, wherein:

A, independent for each occurrence, represents a fragment of serum albumin (SA);

B, independent for each occurrence, represents a biologically active heterologous peptide sequence;

C, independent for each occurrence, represents a second biologically active heterologous peptide sequence or a fragment of serum albumin (SA); and

n is an integer greater than 0;

wherein the chimeric polypeptide exhibits increased biological activity relative to at least one of the heterologous peptide sequences itself.

90. (**Reiterated**) The nucleic acid of claim 89, wherein B and C comprise identical sequences.